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# Updated Recommendations of the Advisory Committee on Immunization Practices (ACIP) Regarding Routine Poliovirus Vaccination

This report updates Advisory Committee on Immunization Practices (ACIP) recommendations for routine poliovirus vaccination. These updates aim to 1) emphasize the importance of the booster dose at age  $\geq 4$  years, 2) extend the minimum interval from dose 3 to dose 4 from 4 weeks to 6 months, 3) add a precaution for the use of minimum intervals in the first 6 months of life, and 4) clarify the poliovirus vaccination schedule when specific combination vaccines are used.

On June 17, 1999, ACIP recommended that all poliovirus vaccine administered in the United States be an inactivated poliovirus vaccine (IPV) beginning January 1, 2000. This policy was implemented to eliminate the risk for vaccine-associated paralytic poliomyelitis, a rare condition that has been associated with use of the live oral poliovirus vaccine (OPV). Since 1999, no OPV has been distributed in the United States. Under these ACIP recommendations, the routine IPV vaccination schedule in the United States consists of 4 doses administered at ages 2 months, 4 months, 6--18 months, and 4--6 years with the minimum interval between all IPV doses as 4 weeks ([1,2](#)).

Since the ACIP recommendation was made 10 years ago, three different combination vaccines containing IPV have been licensed for routine use in the United States ([Table](#)). Because of potential confusion in using different vaccine products for routine and catch-up immunization, ACIP recommends the following:

- The 4-dose IPV series should continue to be administered at ages 2 months, 4 months, 6--18 months, and 4--6 years.
- The final dose in the IPV series should be administered at age  $\geq 4$  years regardless of the number of previous doses.
- The minimum interval from dose 3 to dose 4 is extended from 4 weeks to 6 months.
- The minimum interval from dose 1 to dose 2, and from dose 2 to dose 3, remains 4 weeks.
- The minimum age for dose 1 remains age 6 weeks.

ACIP also is making a new recommendation concerning the use of minimum age and minimum intervals for children in the first 6 months of life. Use of the minimum age and minimum intervals for vaccine administration in the first 6 months of life are recommended only if the vaccine recipient is at risk for imminent exposure to

circulating poliovirus (e.g., during an outbreak or because of travel to a polio-endemic region). ACIP is making this precaution because shorter intervals and earlier start dates lead to lower seroconversion rates (3--5).

In addition, ACIP is clarifying the poliovirus vaccination schedule to be used for specific combination vaccines. When DTaP-IPV/Hib\* (Pentacel) is used to provide 4 doses at ages 2, 4, 6, and 15--18 months, an additional booster dose of age-appropriate IPV-containing vaccine (IPV [Ipol] or DTaP-IPV† [Kinrix]) should be administered at age 4--6 years. This will result in a 5-dose IPV vaccine series, which is considered acceptable by ACIP. DTaP-IPV/Hib is not indicated for the booster dose at age 4--6 years. ACIP recommends that the minimum interval from dose 4 to dose 5 should be at least 6 months to provide an optimum booster response. In accordance with existing recommendations, if a child misses an IPV dose at age 4--6 years, the child should receive a booster dose as soon as feasible (2).

## References

1. [CDC. Recommendations of the Advisory Committee on Immunization Practices: revised recommendations for routine poliomyelitis vaccination. MMWR 1999;48:590.](#)
2. [CDC. Poliomyelitis prevention in the United States: updated recommendations of the Advisory Committee on Immunization Practices \(ACIP\). MMWR 2000;49\(No. RR-5\).](#)
3. Vidor E, Meschievitz C, Plotkin S. Fifteen years of experience with Vero-produced enhanced potency inactivated poliovirus vaccine. *Pediatr Infect Dis J* 1997;16:312--22.
4. Sormunen H, Stenvik M, Eskola J, Hovi T. Age- and dose-interval-dependent antibody responses to inactivated poliovirus vaccine. *J Med Virol* 2001;63:305--10.
5. Dayan GH, Thorley M, Yamamura Y, et al. Serologic response to inactivated poliovirus vaccine: a randomized clinical trial comparing 2 vaccination schedules in Puerto Rico. *J Infect Dis* 2007;195:12--20.

\* Diphtheria and tetanus toxoids and acellular pertussis adsorbed, inactivated poliovirus, and *Haemophilus b* conjugate (tetanus toxoid conjugate) vaccine.

† Diphtheria and tetanus toxoids and acellular pertussis adsorbed, and inactivated poliovirus vaccine.

**TABLE. Currently licensed vaccines containing inactivated poliovirus vaccine (IPV) --- United States, 2009\***

Vaccine composition	Trade name	Manufacturer	Approved use in ACIP† routine schedule	Comments
IPV	Ipol (Poliovax§)	Sanofi Pasteur	2, 4, 6--18 mos, and 4--6 yrs	Approved for use in infants, children, and adults¶
DTaP-HepB-IPV**	Pediarix	GlaxoSmithKline	2, 4, and 6 mos	Approved for first 3 doses of IPV through age 6 yrs††
DTaP-IPV/Hib§§	Pentacel	Sanofi Pasteur	2, 4, 6, and 15--18 mos	Approved for 4 doses of IPV through age 4 yrs¶¶
DTaP-IPV***	Kinrix	GlaxoSmithKline	4--6 yrs	Approved for booster dose at age 4--6 yrs†††

\* As of August 5, 2009.

† Advisory Committee on Immunization Practices. Full schedule available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5751a5.htm>.

§ Not currently distributed in the United States.

¶ Package insert available at <http://www.fda.gov/downloads/biologicsbloodvaccines/vaccines/approvedproducts/ucm133479.pdf>.

\*\* Diphtheria and tetanus toxoids and acellular pertussis adsorbed, hepatitis B (recombinant), and inactivated poliovirus vaccine combined.

†† Package insert available at <http://www.fda.gov/downloads/biologicsbloodvaccines/vaccines/approvedproducts/ucm168055.pdf>.

§§ Diphtheria and tetanus toxoids and acellular pertussis adsorbed, inactivated poliovirus, and *Haemophilus b* conjugate (tetanus toxoid conjugate) vaccine.

¶¶ Package insert available at <http://www.fda.gov/downloads/biologicsbloodvaccines/vaccines/approvedproducts/ucm109810.pdf>.

\*\*\* Diphtheria and tetanus toxoids and acellular pertussis adsorbed, and inactivated poliovirus vaccine.

††† Package insert available at <http://www.fda.gov/downloads/biologicsbloodvaccines/vaccines/approvedproducts/ucm107220.pdf>.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

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